Structural Fumigation: California Aeration Plan "CAP"

Peggy Byerly
Department of Pesticide Regulation
Enforcement Branch

CAP – Key Points

CAP is the new aeration method for California that will soon replace TRAP

<u>CAP Key Points Covered Today Are</u>:

- Background – what led to CAP approval
- CAP vs. TRAP vs. SF Labeling
- CAP equipment & setup (Ducting, Inlets)
- CAP Table 1 (# D & I) & Table 2 (Hours)
- CAP's 4 Steps = New Procedures

CAP Overview - Background

- For the past 2 decades, California has used the T.R.A.P. as the approved aeration method for Branch 1 fumigation
- DOW Study 2004-5 using new Vikane structural aeration method called “CAP”
- About 3 years ago the sulfuryl fluoride B1 labels changed in response to USEPA request for 1.0 ppm clearance requirement

CAP vs. TRAP

Some CAP Advantages

- Removes gas simultaneously from entire structure, not just interspace outside
- Eliminates current need for SCBA worn at each site during first hour of TRAP aeration (Licensee entry into the unknown atmosphere); employees not exposed

CAP vs. Label Procedures

Although CAP supercedes the current registered SF labeling for their "Aeration Procedure Steps 1 & 2", CAP doesn't change label-required "interior prep" activities of food bagging and opening all operable internal doors including:

- **Attics & subareas**
- **Storage cabinets/drawers/closets**
- **Appliances**

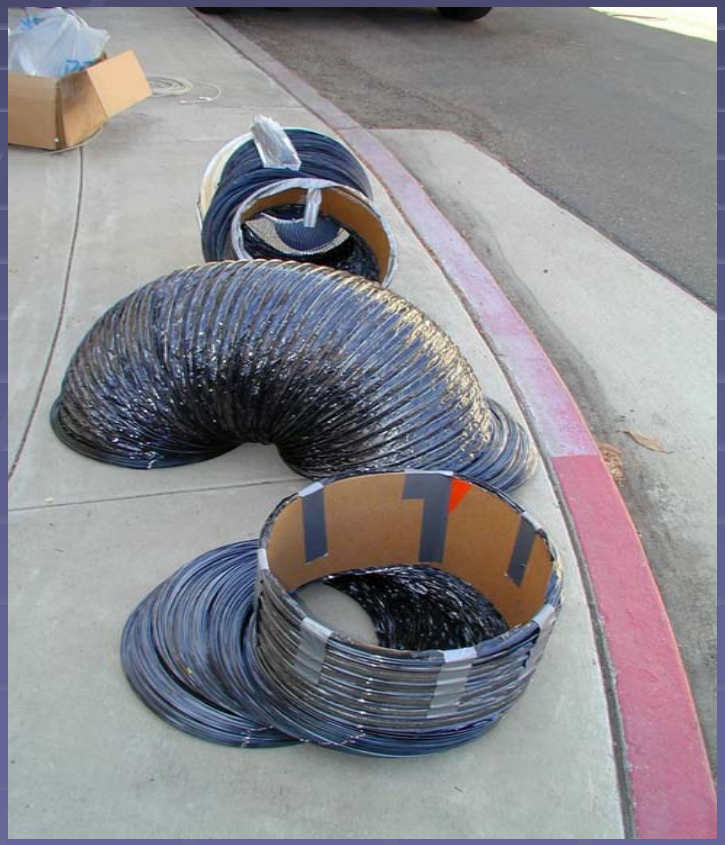
CAP Overview - Equipment

CAP-specific equipment:

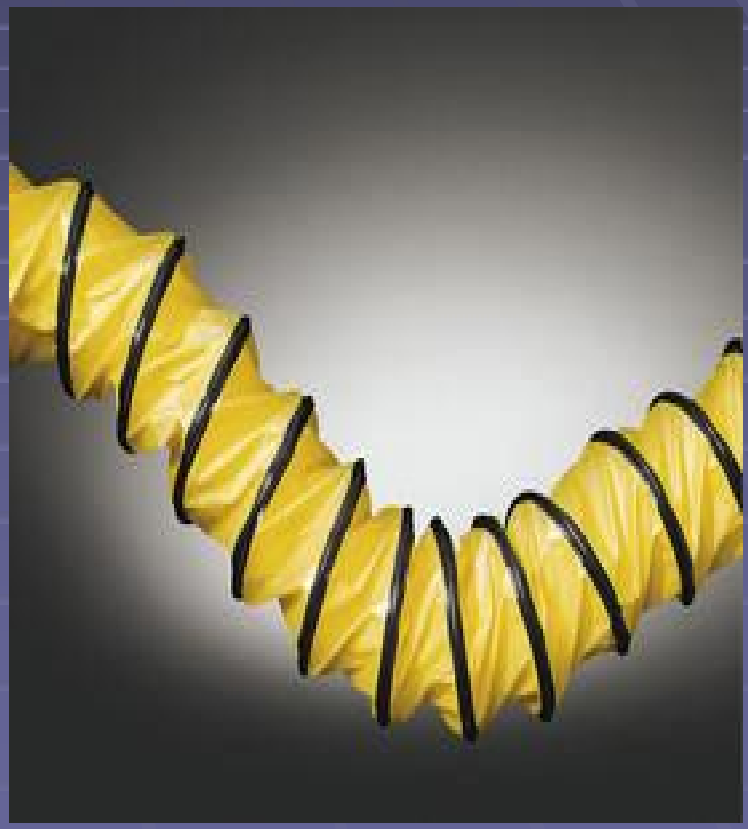
- Installed during application phase setup
- Durable Reinforced Ducting (can be DIY)
- Aeration-specific fans, each ≥ 18 in.
- Inlet Devices (manufactured or DIY)
- Remote (outside structure) activation method for fans in CAP Step 1.

Reinforced Ducting Options

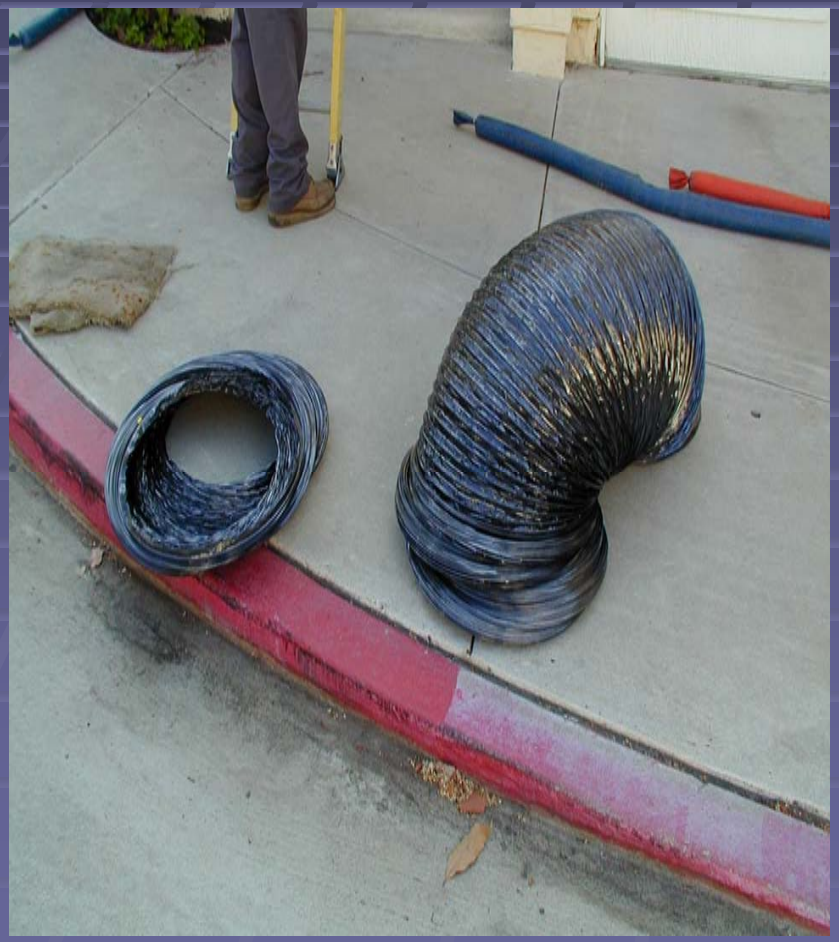
DIY – onsite example

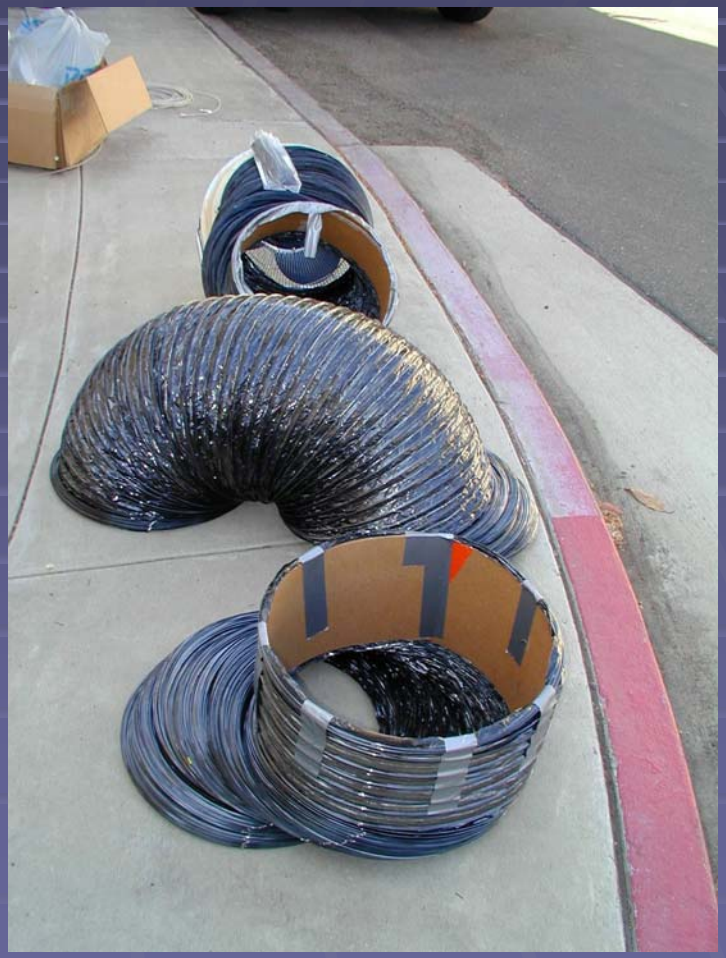


Manufactured

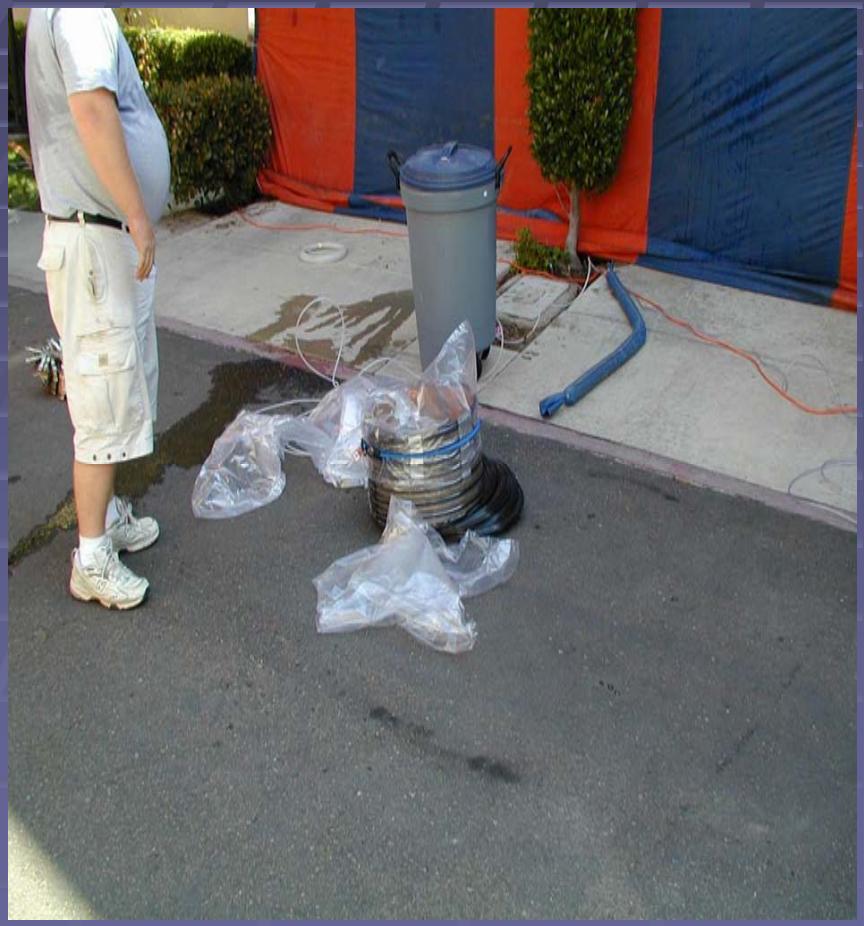


CAP “DIY” Aeration Ducting





CAP Ducting Exterior “Flap”

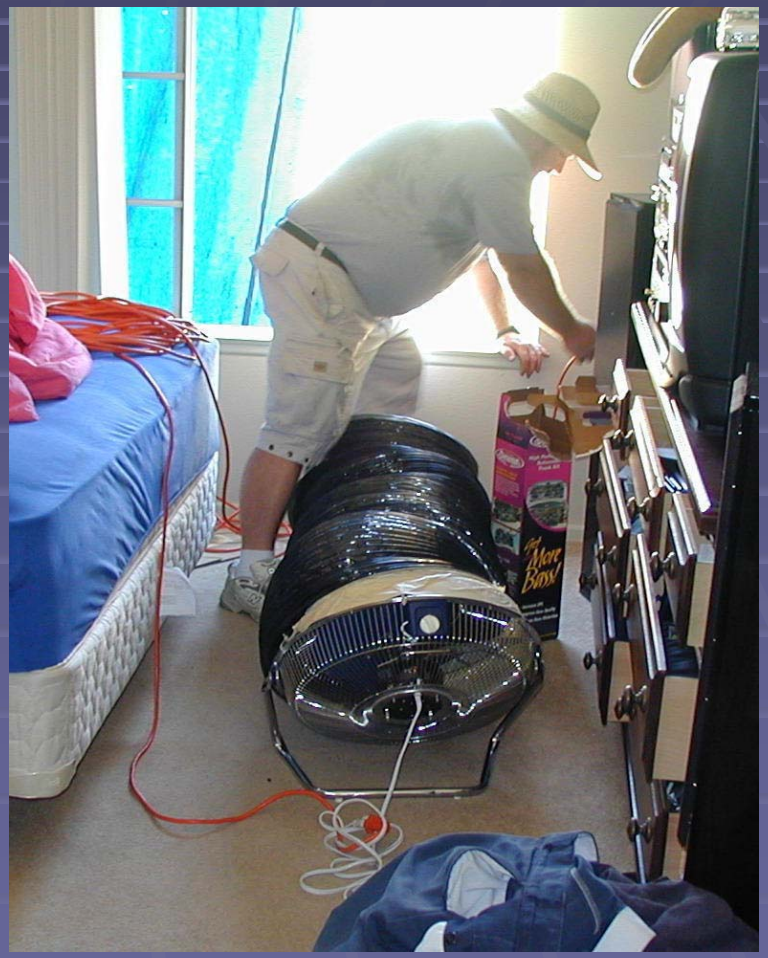


Exterior end of ducting must have some kind of seal (“flap” or cap) that will keep SF from escaping until it is opened or removed in CAP Step 1.

Photo shows DIY using bungee cord to seal

CAP Aeration Fan(s) Placement

- Install Aeration fans with attached ducting placed to draw the air through the structure
- Ducting must extend through tarps and discharge vertically outside the tarp.

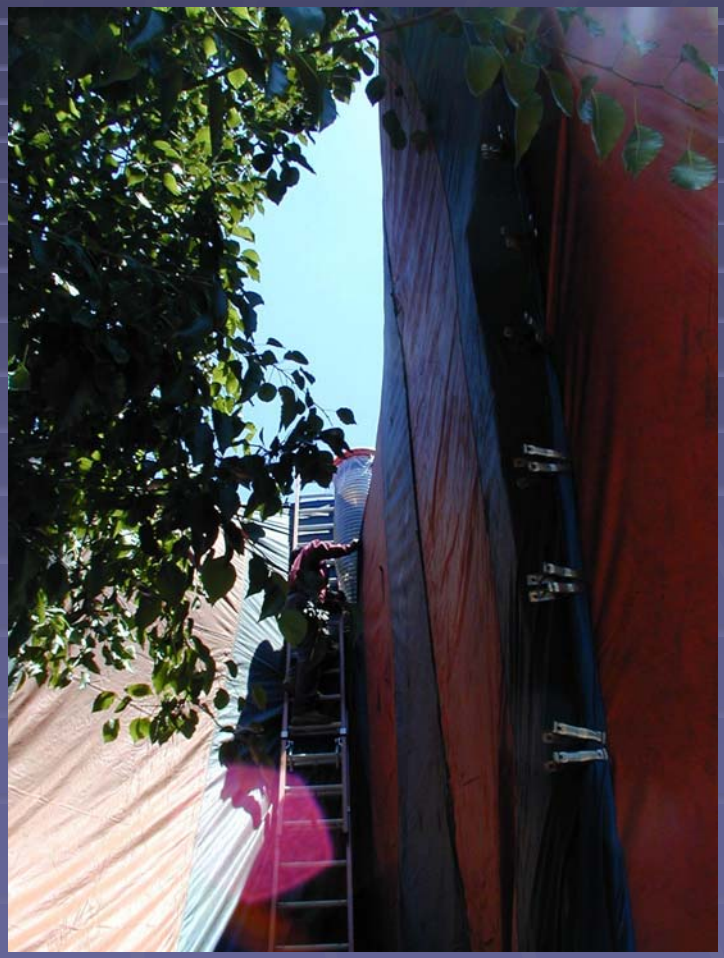


CAP - Ducting Placement

- Single Story - Ducting must extend to roofline or at least 10 feet above ground for higher rooflines

- Multi Story – Ducting

  Photo shows 2 story building ducting from 2nd story



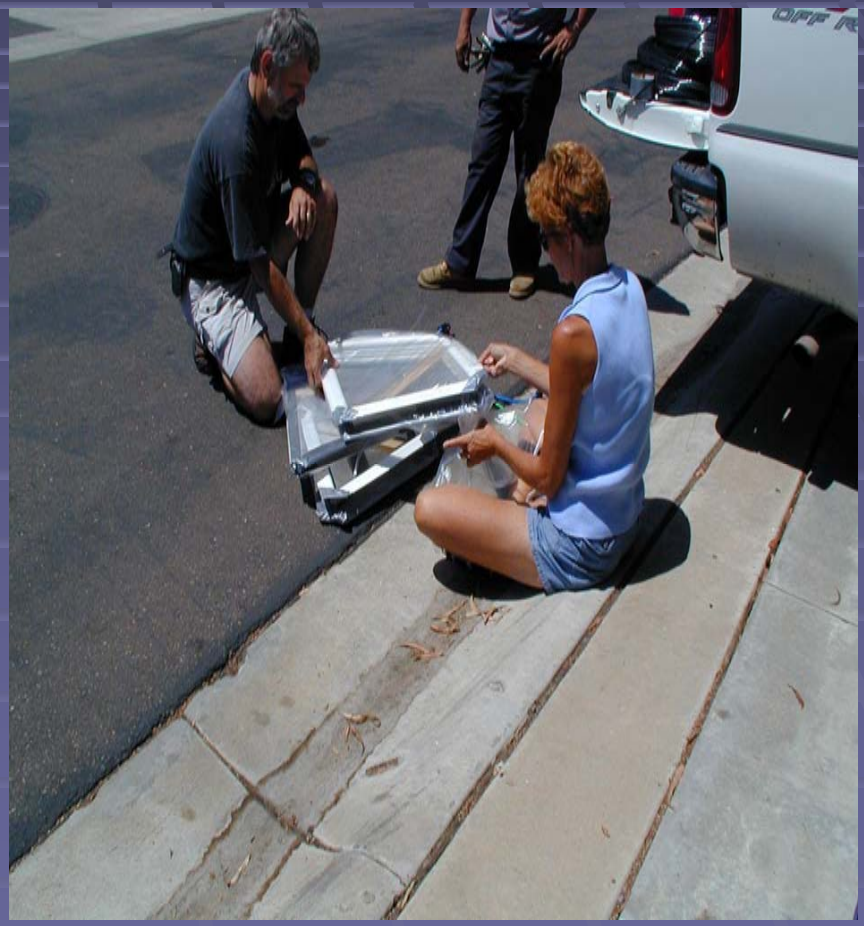
CAP Inlet Device Requirements

- Inlet Opening size ≥ 254 sq inches each
- Inlet Opening – mesh, net, or wire to allow ventilation air flow
- Inlet Opening Cover (application phase) of “highly resistant material”
- # Inlets per structure depends on total # cubic feet calculated volume (Table 1)

CAP Inlet Device Requirements

Inlet device shape is optional as long as it can be covered in a manner to allow opening from outside during CAP Step 1

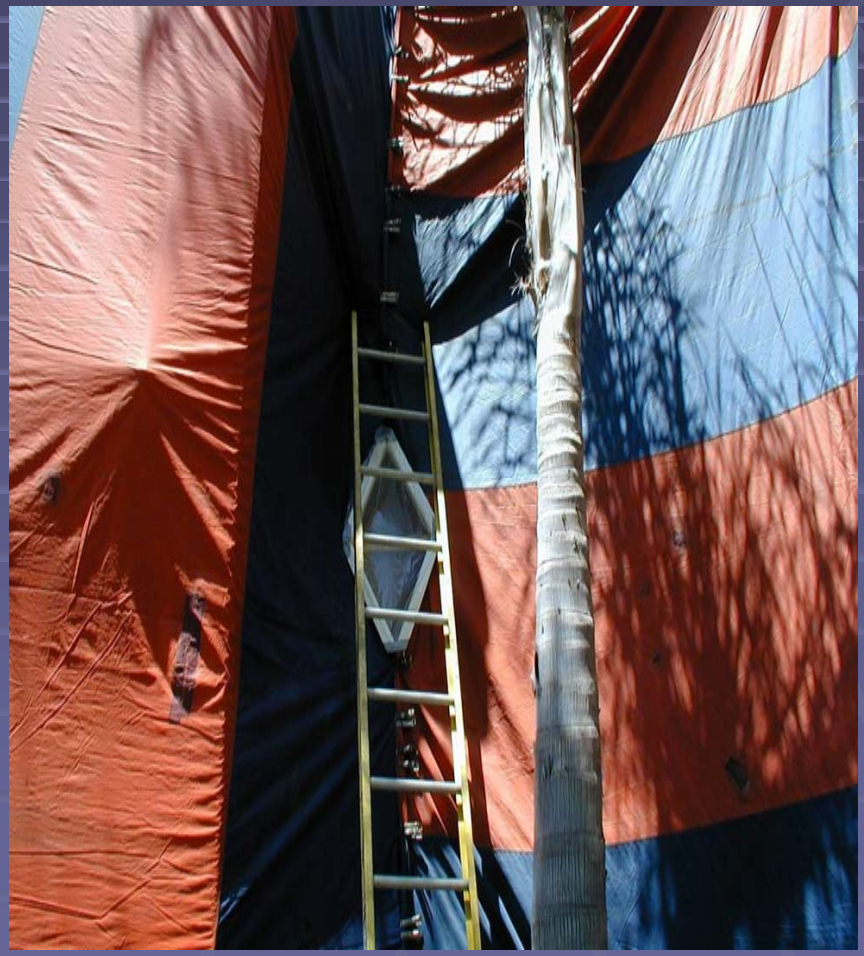
- Photo = “DIY option” used during the DOW aeration study



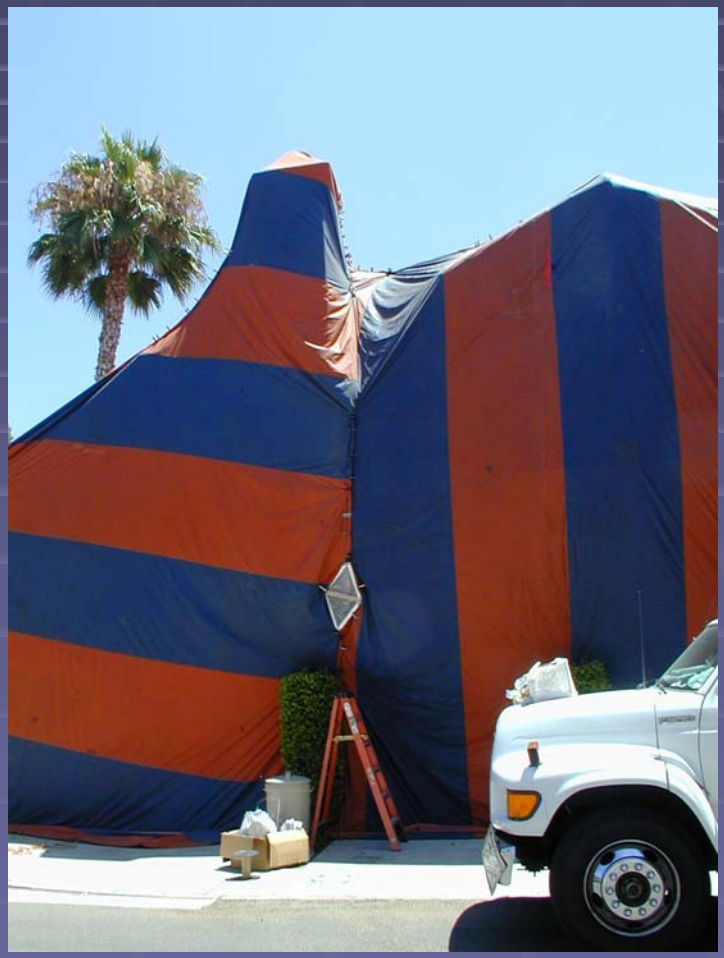
CAP Inlet Device Requirements

Inlet Device Placement

- Placed ≥ **4** feet above exterior grade
- Placed **opposite** from where discharge (aeration ducting) is located
- Where inlet opening air flow not blocked



CAP – Inlet Device Insertion



CAP Table 1: # Ducts vs Inlets

Once the structure's size in cubic feet has been determined, review CAP Table 1 for **minimum** number of ducted fans and inlet devices that will be needed.

Example: For structures ≤ 60,000 cu ft

1 Ducted Aeration Fan and

2 Inlet Devices are required

CAP Table 2: Aeration Hours

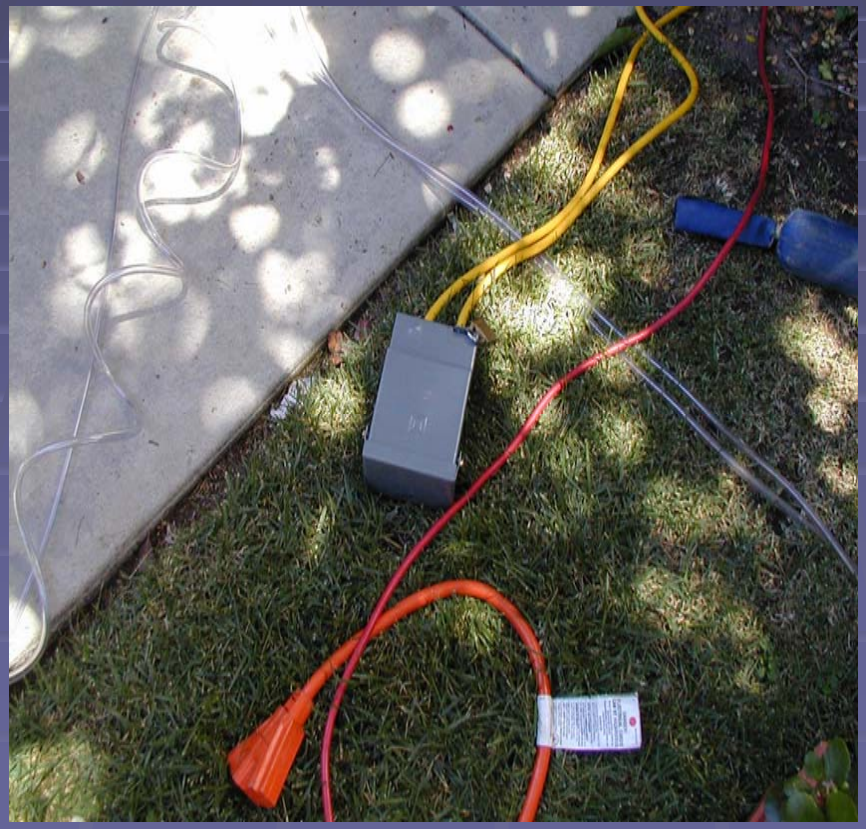
Once the structure's cubic feet is measured and the sulfuryl fluoride label calculations for concentration of fumigant are known, consult CAP Table 2 to determine minimum number of hours aeration time.

Example: For **≤ 16 ounces SF** per 1K cu ft

Minimum Aeration Time = **12 hours**

CAP “Remote” Setup Example

Switch box setup for fans



CAP - Step 1 (Onset)

Step 1 – Performed in Sequence:

- Licensee must be present for this step!
- Activate aeration ducted fans from outside
- Remove seals from the exterior duct ends
- Remove seal (cover) from inlet device(s)

CAP - Steps 2 & 3

Step 2

After required # hours of aeration per Table 2 are completed, **turn off the aeration fans**

Step 3

After fans turned off, remove all tarpaulins and/or seals (snakes) from the structure

Licensee does not need to be present to perform Step 2 or Step 3

CAP - Step 4 (Final To Clear)

- Licensee must be present for this step!
- Enter structure (with Interscan/ExplorIR continuous monitoring device) to remove all chloropicrin pans
- For central air/heating systems, turn on the system fan/blower for each unit **OR**
- Circulation fan may be placed in front of furnace inlet to blow air into the ducts.

CAP - Step 4 Clear For Re-entry

- Next measure the concentration of fumigant in breathing zones using approved fumigant detection device per the registered label. If structure tests ≤ 1.0 ppm, it's ready for certification

- If concentration measures **>** 1.0 ppm, open operable doors & windows for additional ventilation until detection device confirms ≤ 1.0 ppm

CAP - SCBA Caveat

Although the California Aeration Plan is designed not to have an employee enter during a time of unknown atmosphere, so no SCBA is normally required, if ANY equipment malfunction or other fumigation emergency occurs prior to completing CAP Steps 1-4, SCBA must be used to enter per 3CCR 6739 and 16 CCR 1971.

CAP Transition Period

- Transition Period (TRAP or CAP option OK) will continue through SEPTEMBER 1, 2010 at the earliest.

- CAC offices with questions regarding CAP equipment or other requirements should direct their questions to their EBL so that Regional Offices can coordinate information and share answers with other CACs.